ASSOCIATION
OF AMERICAN
RAILROADS

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FEB 07 2000

February 1, 2000

Ms. Wendy R. Dixon, EIS Project Manager
M/S 010
U.S. Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Project Office
P.O. Box 30307
North Las Vegas, NV 89036-0307

Subject: AAR Comments to the U.S. Department of Energy's (DOE's) Draft Environmental Impact Statement (EIS) for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (DOE /EIS-0250-D)

Dear Ms. Dixon:

Attached are the comments of the Association of American Railroads to the U.S. Department of Energy's (DOE's) Draft Environmental Impact Statement (EIS) for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (DOE /EIS-0250-D).

Sincerely,

Robert E. Fronczak

Robert E. Fronczak, P.E.

Attachment

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BEFORE THE
U. S. DEPARTMENT OF ENERGY

DOE/EIS-0250-D
DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR A GEOLOGIC REPOSITORY FOR THE DISPOSAL OF SPENT NUCLEAR FUEL AND HIGH LEVEL WASTE AT YUCCA MOUNTAIN, NYE COUNTY, NEVADA

COMMENTS OF THE
ASSOCIATION OF AMERICAN RAILROADS

On behalf of its member railroads, the Association of American Railroads (AAR)[1] submits the following comments in response to the Department of Energy's invitation to comment on the Draft Environmental Impact Statement (DEIS) for a Geologic Repository for the Disposal of Spent Nuclear Fuel (SNF) and High Level Waste (HLW) at Yucca Mountain, Nye County, Nevada.[2] AAR expects that its member railroads would be involved in all rail shipments of spent fuel to a Nevada repository. Thus, AAR's members have a substantial interest in the DEIS.

I. Dedicated Trains Should Be Used For SNF Shipments

1... The DEIS discusses the use of dedicated trains briefly in Appendix J.[3] On page J-83, dedicated trains are listed as preferable compared to "General Freight"[4] on five of seven

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[1]A trade association whose membership includes freight railroads that operate 75 percent of the line-haul mileage, employ 91 percent of the workers, and account for 93 percent of the freight revenue of all railroads in the United States; and Amtrak, which operates almost all of the nation's intercity passenger trains.

[2]64 Fed. Reg. 44200 (Aug. 13, 1999).

[3]DEIS for a Geologic Repository for the Disposal of SNF and HLW at Yucca Mountain, Nye Country, Nevada page J-82-J-83.

[4]General freight trains carry all types of freight, including automobiles, food products, other hazardous materials, etc. General freight moves from classification yard to classification yard, where trains are broken up into new trains for transportation to the next yard until they reach their

1 cont.

categories, with the other two being unclear. Dedicated trains travel from point of origin to point of destination without traveling through classification yards. Categories where dedicated trains are better than general freight service are as follows:

- Overall accident rate for accidents that could damage shipping casks.
- Security
- Incident free dose to public
- Radiological risks from accidents.
- Occupational dose.

The two categories which are unclear are:

- Grade crossing, trespasser, worker fatalities
- Utilization of resources.

AAR believes that all rail shipments of SNF should be made in dedicated trains. The more a car has to be handled, the greater the risk of an accident, even though the probability of an accident occurring in any event is small.[5] If SNF cars were placed in general freight service trains, they would have to be "switched" in and out of trains at rail yards. No switching is necessary for dedicated trains. Furthermore, if regular train service were used for SNF shipments, the switching of rail cars in and out of the trains would take time. DOE should strive to minimize the amount of time SNF shipments are in transportation. A premise of hazardous materials transportation is that the less time a hazardous material shipment spends in transportation, the better.

Dedicated trains are essential if premium equipment designed to lower the probability of a derailment is to be used for SNF shipments. For example, if dedicated trains were used, the

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intended destination.

[5]In a July 1999 presentation to the Transportation External Coordination Working Group by Ray English, Transportation Officer for the Department of Navy "Since 1957, there have been 709 shipments of spent nuclear fuel that have been moved without incident by rail in Type B containers." According to Kevin Blackwell of the Federal Railroad Administration (FRA) "In the last 40 years there have been over 1,000 shipments of SNF transported by rail in this country without injury or a fatality."

1 cont. trains could be equipped with electronically-controlled pneumatic (ECP) brakes, a recent industry innovation that can only be utilized where all cars in a train are equipped with these brakes.[6] ECP brakes provide a communication system throughout the train. That communication system could be used to transmit train health information to the locomotive and security crews. The train health information could include monitoring for known derailment causes such as truck hunting[7], rocking[8], wheel flats[9], bearing condition, braking performance, and vertical and longitudinal acceleration.

Another feature that could be incorporated in dedicated trains is premium suspensions. Premium suspensions reduce lateral wheel forces and vertical dynamic impact forces, which can result in derailments.[10] In addition, dedicated trains could be equipped with a GPS system so its location could be monitored from a central location at all times. This would allow immediate

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[6]ECP brakes have shorter stopping distances than pneumatic brakes -- up to 70 percent shorter. ECP brakes are also more reliable, reduce slack action, improve fuel economy, and result in less wear and tear on wheels. Furthermore, the electronics used for ECP brakes permit constant monitoring by the train crew of the performance and condition of the braking system. *See* J. Lundgren, "ECP for Heavy Freight Service: Train Control and Monitoring for the 21st Century" (Transportation Technology Center, Inc. 1999).

[7]Truck hunting is an instability at high speed of a wheel set or truck causing it to weave down the track, usually with the flange of the wheel striking the rail.

[8]Excessive lateral rocking of cars and locomotives, usually at low speeds. The speed range at which this cyclic phenomenon occurs is determined by such factors as the wheel base, height of the center of gravity of each individual car or engine, and the spring dampening associated with each vehicles's suspension system.

[9]Wheel flat is a flat spot or loss of roundness of the tread of a railroad wheel caused by wheel sliding.

[10]*See* D. Li and L. Smith, "Dynamic Vehicle/Track Testing on the Heavy Tonnage Loop" (Transportation Technology Center, Inc. 1999).

1 cont.

response to an incident in transportation if the crew were to become disabled.

In all cases, dedicated SNF trains would be substantially shorter than regular SNF trains. It would be much easier for escorts to monitor SNF cars in shorter trains.

With the advantages that dedicated trains pose, it is surprising that while DOT recognizes that "dedicated trains could provide advantages over regular trains, for incident free transportation"[11], DOE states that "available information does not indicate a clear advantage for the use of either dedicated trains or general freight service."[12] As stated above, Table 34 of the DEIS compares dedicated train to general freight service in seven categories with dedicated trains coming out favorable in five of the seven categories listed.

II. Escort Concerns

If dedicated trains are used, AAR also has several observations regarding how escorts should be provided. Escort services should not slow the movement of SNF shipments. Thus, SNF trains should contain adequate food supplies for escorts and fulfill other needs that occur en route, so that the trains will not have to stop to fulfill the needs of security personnel. Changes in escorts should occur only when trains have to be stopped for mechanical inspections or crew changes, so that there are no unnecessary delays (currently, FRA regulations require that trains stop for brake inspections every 1,000 miles).

Escort cars need to be compatible with the SNF cars. For example, were cars equipped with ECP brakes used to transport SNF, then the escort cars, too, would need to be equipped with ECP brakes.

Finally, concern for the safety of escorts is another reason why dedicated trains should be used to transport SNF. As stated above, the use of regular trains would require switching SNF cars in and out of trains. Accordingly, escort personnel would have to change trains whenever the trains they were riding in were

[11]DEIS for a Geologic Repository for the Disposal of SNF and HLW at Yucca Mountain, Nye Country, Nevada page J-82.

[12]DEIS for a Geologic Repository for the Disposal of SNF and HLW at Yucca Mountain, Nye Country, Nevada page J-82.

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1 cont. switched. Rail yards can be dangerous places for those unfamiliar with railroad operations. From the perspective of the escorts, it would be desirable to stay on one train to the maximum extent possible and minimize walking around tracks where rail cars are constantly being moved among trains.

AAR's member railroads are committed to transporting SNF safely. The DOE can enhance safety by requiring the use of premium equipment and dedicated trains. AAR's members look forward to working with the DOE and other interested parties on such measures to ensure the safe, efficient transportation of SNF.

Respectfully submitted,

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